APPENDIX III TO PART 1918—THE MECHANICS OF CONVENTIONAL CARGO GEAR (NON-MANDATORY)

NOTE: This appendix is non-mandatory and provides an explanation of the mechanics in the correct spotting of cargo handling gear.

Although the most prevalent method of cargo handling is accomplished through the use of modern shoreside container gantry cranes, there are occasions when break-bulk cargo is handled with conventional ship's cargo gear. This appendix provides a reference for those unfamiliar with such cargo gear.

Sections 1918.52, 1918.53, and 1918.54 all address the subject of rigging and operating vessel's cargo handling gear. It is important to understand that under the Burton System of cargo handling (conventional gear consisting of two cargo derricks with married falls), the midships or up-and-down boom should be spotted as close to the fore and aft centerline of the hatch as operationally possible. Such spotting of the up-and-down boom will allow the most effective leads for the guy(s) and preventer(s) to safely support the lateral stresses generated in the boom(s) by the married falls. As the lead of the guy(s) and preventer(s) approaches the vertical, in supporting the boom(s) head, the total stress in the guy(s) increases rapidly due to the increased vertical force that is generated in the guy(s) in order to counteract any particular horizontal or lateral force exerted on the boom(s) head. The appreciable vertical forces that are generated in this process are transmitted, in substantial part, to the boom(s) and topping lift(s), causing proportionate compressive stresses in the boom(s) and tension stresses in the topping lift(s).

In general, guys and preventers must be located so that enough vertical resistance is developed so as to prohibit the boom(s) from jackknifing as cargo passes across the deck. Special care must be exercised in the proper placement of guys and preventers associated with the Burton or yard boom. Preventers, when used, must parallel as closely as possible the guys that they support. Guys and preventers must not be attached to the same fitting.

While under a load, the cargo falls (running rigging) must not be permitted to chafe on any standing or other running gear. Special attention must be paid to ensure that cargo runners work freely through the heel block, without chafing the cheek of the block. Also, bobbing chains and heel block preventers must be attached so as to not interfere with the movement of the cargo runners.

APPENDIX IV TO PART 1918—SPECIAL CARGO GEAR AND CONTAINER SPREADER TEST REQUIREMENTS (MANDATORY) [SEE §1918.61 (f), (g), (h)]

Type gear	Test requirement	Tested by	Proof test	
A. All Special Cargo Handling Gear Purchased or Manufactured on or After January 21, 1998				
1. Safe Working Load—greater than 5 short tons (10,000 lbs./4.5 metric tons).	Prior to initial use	OSHA accredited agency only.	Up to 20 short tons.	125% SWL.
	Prior to reuse after structural damage repair.		From 20 to 50 short tons.	5 short tons in excess of SWL.
	Every four years after initial proof load test.	OSHA accredited agency or designated person.	Over 50 short tons	110% SWL.
2. Safe Working Load—5 short tons or less.	Prior to initial use	OSHA accredited agency or designated person.	125% SWL.	
	Prior to reuse after structural damage repair.			
3. Intermodal container spreaders not part of vessel's cargo handling gear.	Prior to initial use	OSHA accredited agency only.	125% SWL.	
	Prior to reuse after structural damage repair.			
	Every four years after initial proof load test.	OSHA accredited agency or designated person.		
B. All Special Cargo Handling Gear in Use Prior to January 21, 1998 and Proof Load Tested Prior to Initial Use (See Note Below)				
1. Safe Working Load—greater than 5 short tons (10,000 lbs./4540 kg.).	Every four years starting on January 21, 1998.	OSHA accredited agency or designated person.	Up to 20 short tons.	125% SWL.
	Prior to reuse after structural damage repair.	OSHA accredited agency	From 20 to 50 short tons.	5 short tons in excess of SWL.
			Over 50 short tons	110% SWL.